

***Thomasia julietiae* (Malvaceae: Byttnerioideae), a delicate new species  
with horticultural potential from south-western Australia**

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**SHORT COMMUNICATION**

This poorly known but highly attractive new species belongs to the unusual *Thomasia stelligera* (Turcz.) Benth. species group, which is defined by an absence of stipules (a feature usually characteristic of *Lasiopetalum* Sm.) and the presence of both stellate and scale-like hairs (see Figure 1A in Shepherd & Wilkins 2017). This group is retained within *Thomasia* J.Gay due to the presence of staminodes and a prominent rib along each lobe of the petaloid calyx (Figure 1B). Despite its delicate habit, this beautiful species produces an abundance of pink flowers (Figure 2). As such, it has significant horticultural potential and would make a lovely addition to semi-shaded garden habitats.

***Thomasia julietiae* K.A.Sheph. & C.F.Wilkins, *sp. nov.***

*Type:* west of Woodanilling, Western Australia [precise locality withheld for conservation reasons], 3 October 2017, K.A. Shepherd & J.A. Wege KS 1665 (*holo:* PERTH 08984840; *iso:* AD, BRI, CANB, K, MEL, NSW).

*Thomasia* sp. Arthur River (H.F. & M. Broadbent 1409), Western Australian Herbarium, in *FloraBase*, <https://florabase.dpaw.wa.gov.au/> [accessed 26 February 2018].

Low spreading *shrub* 0.2–0.5(–1) m high, 0.4–0.6(–1.3) m wide. *Young stems* with an indumentum of scattered sessile or shortly stalked (to 0.1 mm long), multi-angulate stellate hairs with 9–12 arms to 0.7 mm long, over moderately dense to dense scale-like stellate hairs with 22–25 arms fused toward the centre, each arm to 0.2 mm long. *Petioles* (0.5–)1–2.5(–3.3) mm long, indumentum as for young stems. *Stipules* absent. *Leaves* narrowly ovate to ovate or elliptic, discolorous, (1.5–)4.5–9.5 mm long, (1.5–)2.5–5.7 mm wide, base rounded to cuneate or scarcely cordate, apex rounded to acute; margins sinuate, moderately recurved; abaxial surface with scattered sessile or shortly stalked (to 0.1 mm long) stellate hairs with 10–12 arms, each 0.2–0.7 mm long, over moderately dense, scale-like stellate hairs, with 16–22 arms fused towards the centre, each arm 0.2 mm long; adaxial surface with scattered sessile or occasionally stalked stellate hairs with 9–12 arms, each 0.2–0.3 mm long, glabrescent (sometimes with hair stalks remaining). *Inflorescence* a loose monochasium, 23–79 mm long, with 3–7 flowers. *Peduncles* 11–41 mm long with occasional shortly stalked stellate hairs with

*c.* 12 arms, each 0.4–0.7 mm long, over moderately dense scale-like stellate hairs to 0.15 mm long. *Pedicels* 3.1–5.8 mm long, indumentum as for peduncles but with the shortly stalked stellate hairs sometimes absent. *Bract* narrowly elliptic to elliptic, 1–2.2(–3) mm long, 0.3–1.2 mm wide. *Epicalyx bracts* 3, below the calyx, narrowly oblong to very narrowly elliptic, 1.6–2.9 mm long, 0.3–0.8 mm wide; abaxial surface with moderately dense stellate hairs with 8–10 arms to 0.1 mm long; adaxial surface and margin with occasional stellate hairs with *c.* 8–12 arms to 0.15 mm long. *Calyx* mauvish pink with dark reddish purple ribs, 3.7–5 mm long, with a tube 2–2.5 mm long; lobes ovate, 2–3.5 mm long, 3.5–6 mm wide; outer surface with scattered (becoming denser towards the base) scale-like stellate hairs with 8–10 arms fused towards the centre, each arm 0.15–0.6 mm long; inner surface with scattered stellate hairs with 3–6 arms to 0.15 mm long. *Petals* dark reddish purple, ovate, glabrous, 0.5–0.7 mm long, 0.4–0.7 mm wide. *Staminal filaments* 0.9–1 mm long, 0.2–0.4 mm wide. *Staminodes* 0.4–0.7 mm long. *Anthers* 1.8–2.5 mm long, 0.6–0.8 mm wide, glabrous or with occasional stellate hairs around the apical pores. *Ovary* 3-locular (with 2 ovules per locule), 1–1.2 mm long, 0.8–1 mm wide; outer surface with a tomentum of scale-like stellate hairs with fused arms towards the centre, each arm to 0.5 mm long. *Style* 2.2–2.5 mm long. *Fruit* and *seed* not observed. (Figures 1, 2)

*Diagnostic features.* *Thomasia julietiae* can be distinguished from all other members of the genus by the following combination of characters: an absence of stipules; narrowly ovate to ovate or elliptic leaves with sinuate margins; an inflorescence with an indumentum of scale-like hairs, long peduncles (11–41 mm), and a calyx < 5 mm long; and an ovary with three locules.

*Other specimens examined.* WESTERN AUSTRALIA: [localities withheld for conservation reasons] 21 Sep. 1953, H.F. & M. Broadbent 1409 (BM, PERTH); 15 Oct. 2010, M. Hislop 4244 (CANB, MEL, PERTH).

*Phenology.* Flowering in spring, from September to October.

*Distribution and habitat.* This species is only known from a single population located near the boundary of the Avon Wheatbelt and Jarrah Forest bioregions in the south-west of Western Australia. It grows in upland areas in brown sandy loam over laterite with exposed granite outcropping in mallee woodland with *Eucalyptus thamnoides*, *Melaleuca hamata*, *Hakea lissocarpha*, *Xanthorrhoea* and *Dampiera*.

*Conservation status.* This species is listed as Priority One under Conservation Codes for Western Australian Flora (Smith & Jones 2018), under the name *T. sp.* Arthur River (H.F. & M. Broadbent 1409). The known population comprises fewer than 30 individuals that are growing along the boundary of a nature reserve and adjacent to farmland. Further survey is required.

*Etymology.* *Thomasia julietiae* commemorates our friend and colleague Dr Juliet Ann Wege (1971–), who has made a significant contribution to flora conservation through her ongoing work describing Western Australian species and revising the triggerplant family Stylidiaceae for the Flora of Australia. She has formally named 59 taxa across a range of plant families (including nine species in this special issue) and has facilitated the publication of many more through her editorial work at *Nuytsia*, which has included a term as Managing Editor (2013–2018, 2020). Throughout the years Juliet has provided us with unwavering friendship and support, both professionally and personally, for which we are incredibly grateful.

*Vernacular name.* Juliet's *Thomasia*.

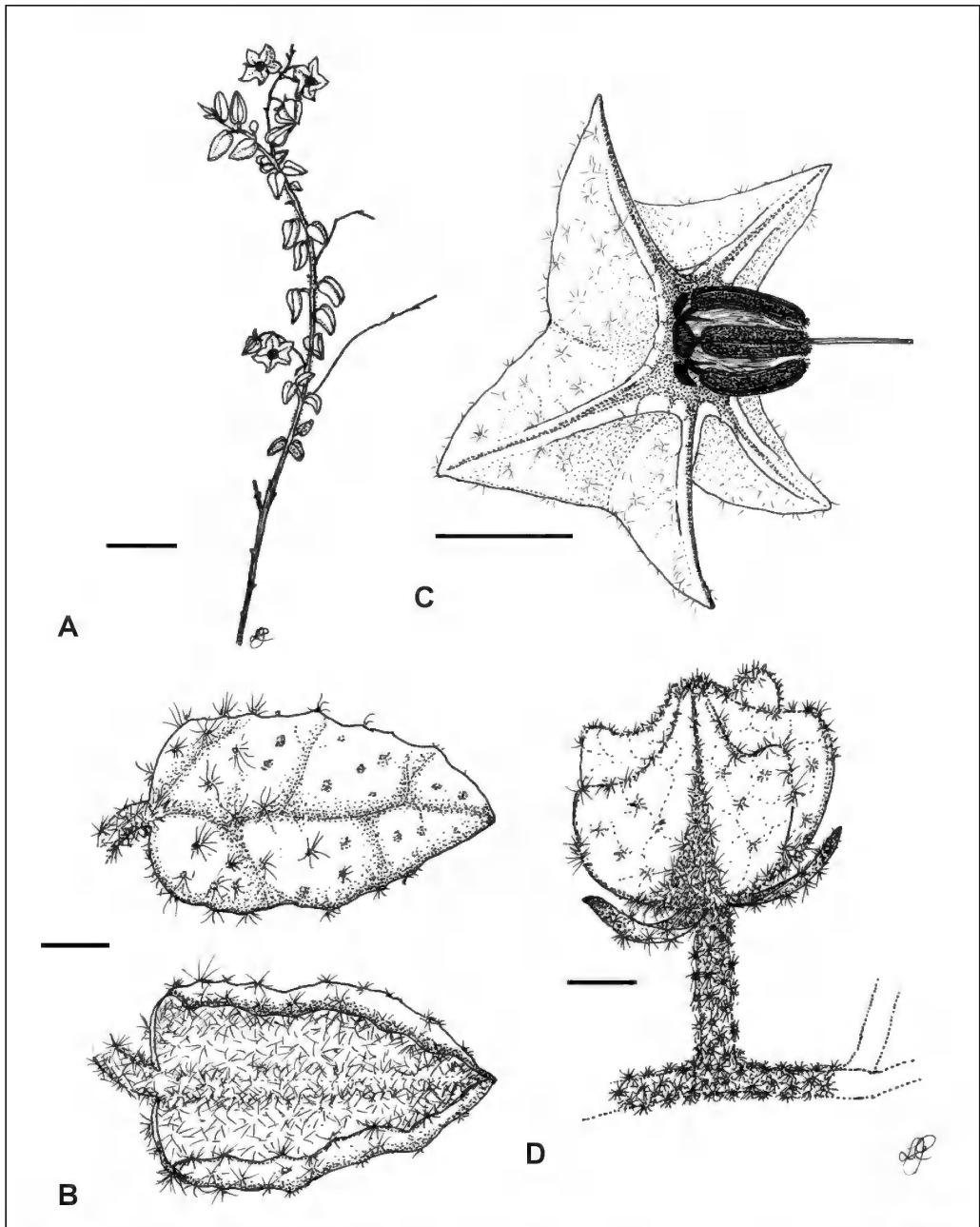


Figure 1. Line drawing of *Thomasia julietiae*. A – habit; B – leaf showing the adaxial (top) and abaxial (bottom) surfaces and multi-angulate stellate hairs; C – flower showing the prominent rib along each petaloid calyx lobe and the scale-like petals at the base of each anther; D – bud showing the scale-like stellate hairs on the peduncle and pedicel. Scale bars = 10 mm (A), 1 mm (B, D) and 2.5 mm (C). Voucher: H.F. & M. Broadbent 1409. Illustration by Lorraine Cobb.



Figure 2. *Thomasia julietiae*. A – habitat and habit; B – small, elliptic leaves and monochasium of mauish pink flowers with dark reddish purple ribs; C – plant *in situ* highlighting the horticultural potential of this floriferous species; D – narrow epicalyx bracts at the base of the flowers (white arrow) and small scale-like stellate hairs on the peduncle and pedicels. Photographs by K.A. Shepherd from K.A. Shepherd & J.A. Wege KS 1665.

**Affinities.** *Thomasia julietiae* is morphologically most similar to *T. microphylla* Paust and *T. sp.* Green Hill (S. Paust 1322), species that also have narrowly triangular to narrowly ovate anthers and a 3-locular ovary. Other species from the *T. stelligera* species group, namely *T. stelligera*, *T. pygmaea* (Turcz.) Benth. and *T. gardneri* Paust, have oblong to ovate anthers and four or five locules per ovary. *Thomasia julietiae* can be distinguished from *T. microphylla* and *T. sp.* Green Hill by its generally longer peduncles (11–41 mm long vs 5–30 mm) and smaller calyx (3.7–5 mm long vs 5.5–9 mm). It also has rough (rather than smooth) leaves as a result of the veins being slightly sunken.

### Acknowledgements

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### References

- Shepherd, K.A. & Wilkins, C.F. (2017). A revision of the *Lasiopetalum floribundum* group (Malvaceae), including recognition of four new species. *Nuytsia* 28: 273–298.
- Smith, M.G. & Jones, A. (2018). *Threatened and Priority Flora list 5 December 2018*. Department of Biodiversity, Conservation and Attractions. <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-plants> [accessed 18 September 2019].